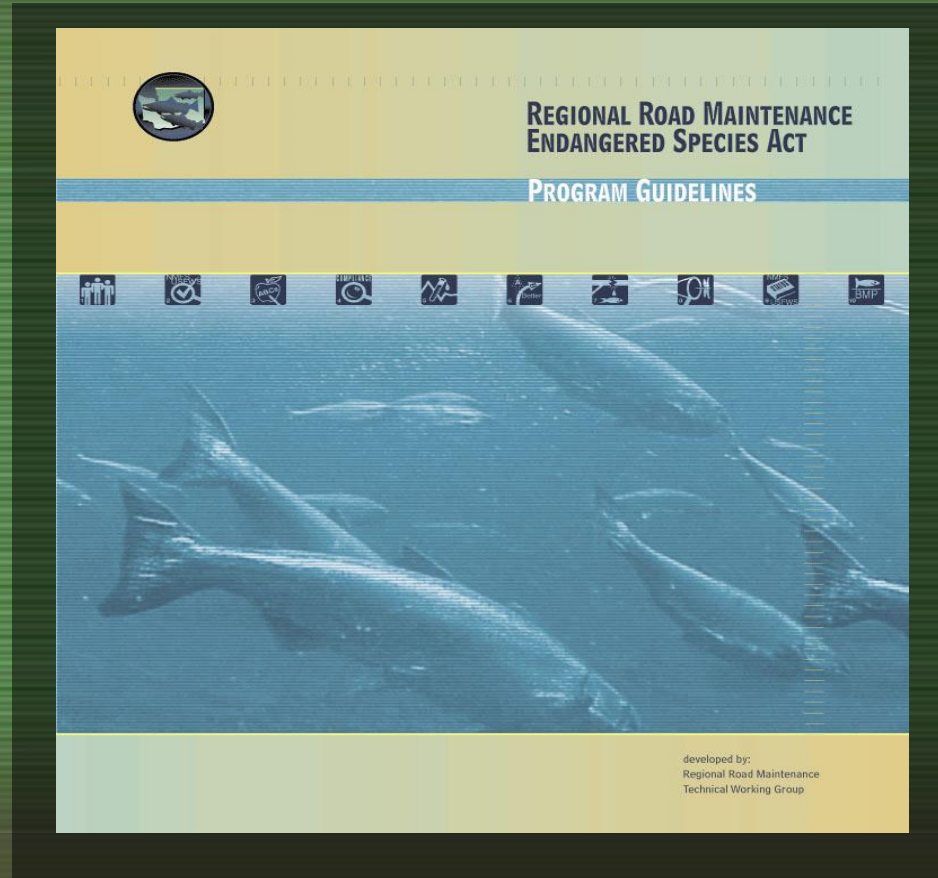


Regional Road Maintenance ESA Program Guidelines



Regional Road Maintenance ESA Program Guidelines



<http://www.kingcounty.gov/transportation/kcdot/Roads/Environment/RegionalRoadMaintenanceESAGuidelines.aspx>

Regional Program Background

- ⇒ Chinook Salmon, Listed as Threatened May 1999
- ⇒ Bull Trout, Listed as Threatened December 1999
- ⇒ Steelhead listed as Threatened May 2007
- ⇒ Coordinate with other state and federal regulations
- ⇒ Assembled by road maintenance people to help road maintenance people.
- ⇒ Coordinated with NOAA Fisheries and USFWS.
- ⇒ NOAA Fisheries completed a NEPA, FONSI, and a BO

Regional Program

- **Product of Collaborative Effort**
 - **Multiple Jurisdictions**
 - **NOAA Fisheries and USFWS**
 - **Others**
- **Regional Program Guidelines (Part I & II)**
 - **Umbrella Program**
 - **Developed for Use by Maintenance Personnel**
- **Part III Application (Plug and Play Format)**
 - **Jurisdiction Commitment to Parts 1 and 2**

NOAA Fisheries Approval

- ➔ NOAA Fisheries completed a Biological Opinion in August 2003 (Tracking Number 2003/00313) and determined that the “...proposed action is not likely to jeopardize the continued existence of these species.” - (ESA Listed Salmon) or adversely modify their designated critical habitat
- ➔ Take prohibitions under section 9 of the ESA and applicable 4(d) rules will not apply to the routine road maintenance practices carried out by jurisdictions that adopt the Regional Program

What's It All About?

The Regional Program Requires:

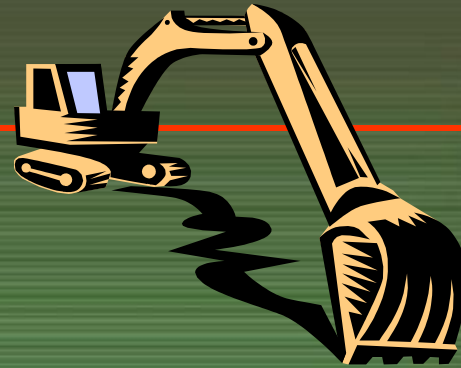
⇒ ACCOUNTABILITY

- for conservation outcomes
- to your agency, to the Regional Forum, to the Services

⇒ IMPLEMENTATION

- of Best Management Practices
- of the Regional Road Maintenance ESA Program

Key Concepts:



The Regional Road Maintenance Program seeks these outcomes for maintenance activities:

- ⇒ MINIMIZE erosion/sedimentation
- ⇒ CONTAIN pollutants
- ⇒ MAXIMIZE habitat improvements

What? Activities Covered By The Regional Program:

Definition of Maintenance...

- ⇒ Currently serviceable structures, facilities and equipment**
- ⇒ Does not expand or change use**
- ⇒ Has no significant negative hydrologic impact**
- ⇒ Prevents decline, lapse or cessation in use**
- ⇒ Replacements to meet engineering or permit standards**

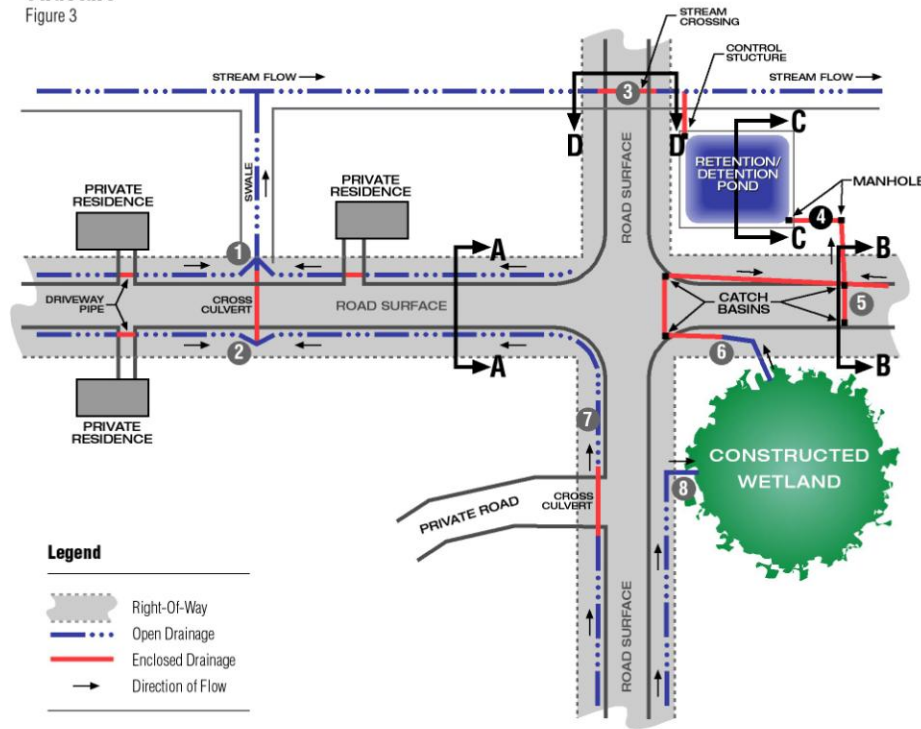
What? Activities not covered by the Regional Program:

- ⇒ Construction of new facilities**
- ⇒ Major expansion of existing facilities**
- ⇒ Activities outside the scope of the Guidelines**

Where? The ROW Structure

Typical Row Structure

Figure 3



Legend

- Right-Of-Way
- Open Drainage
- Enclosed Drainage
- Direction of Flow

Probable BMP Locations

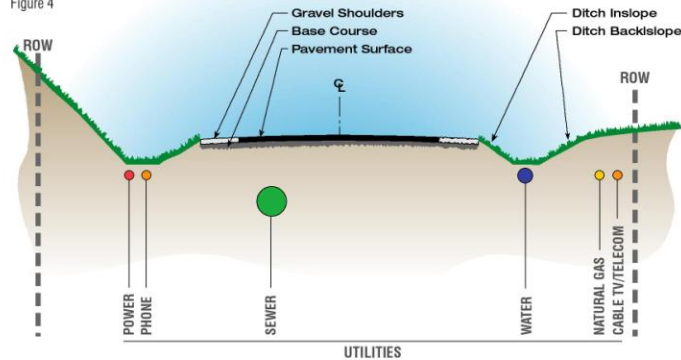
- 1 Where water leaves the ROW
- 2 Prior to water crossing the roadway
- 3 Upstream and downstream of stream crossing
- 4 Prior to water entering the detention facility
- 5 Cleaning of structures and oil water separators
- 6 Prior to water entering the enclosed system
- 7 Along ditches to collect siltation
- 8 Wherever water leaves ROW into sensitive areas

- ➔ Includes planned, designed, engineered or constructed features
- ➔ Includes features in ROW, easements, tracts to support the road ROW structure

Where? The ROW Structure

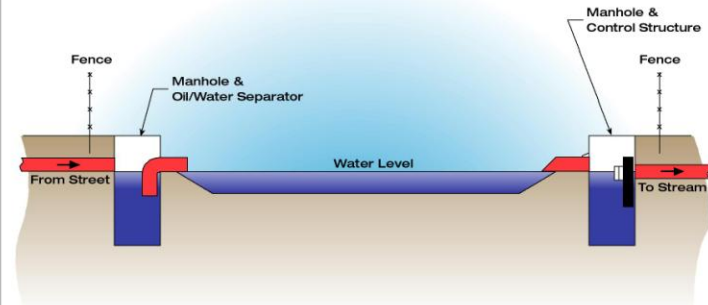
SECTION A-A OPEN DRAINAGE SYSTEM

Figure 4



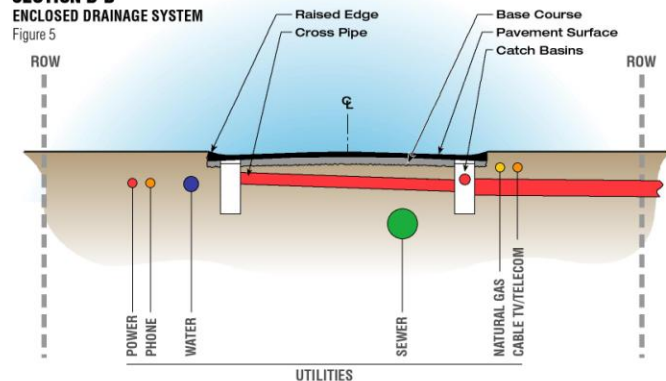
SECTION C-C RETENTION/DETENTION FACILITY

Figure 6



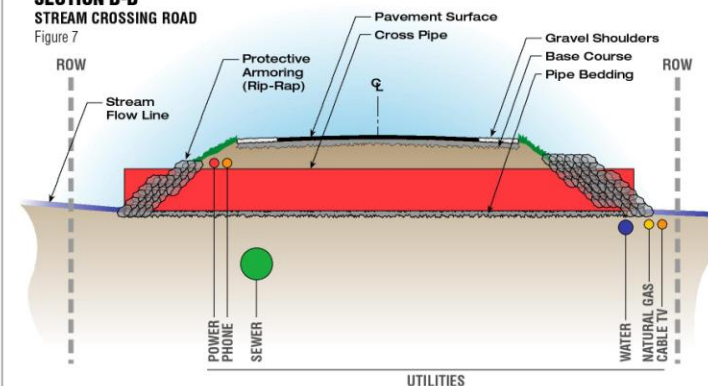
SECTION B-B ENCLOSED DRAINAGE SYSTEM

Figure 5

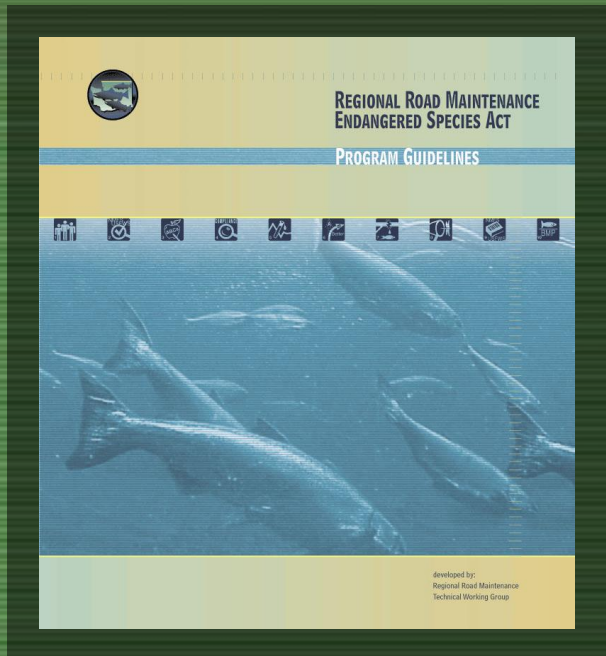


SECTION D-D STREAM CROSSING ROAD

Figure 7



How? “The Guidelines”



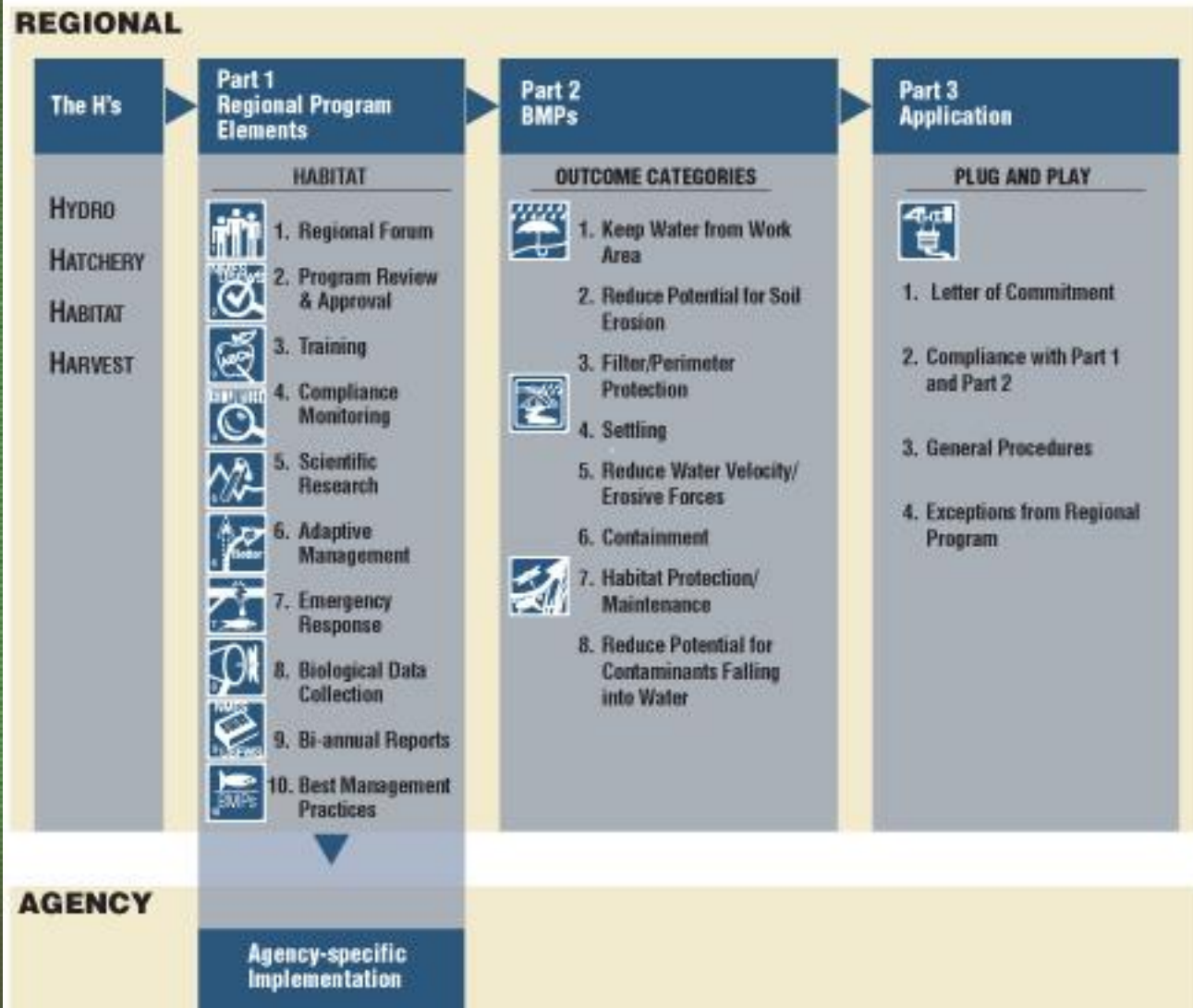
- ⇒ **Part 1: Regional Program**
- ⇒ **Part 2: Best Management Practices**
- ⇒ **Part 3: Local Agency Application**

Who? The Regional Forum Members

- | | | |
|----------------------|------------------------------------------------------------------|------------------------------|
| 1. City of Bellevue | 11. King County | 21. City of Poulsbo |
| 2. City of Bremerton | 12. Kitsap County | 22. City of Renton |
| 3. City of Burien | 13. City of Lake Forest Park | 23. City of Sammamish |
| 4. Clallam County | 14. City of Lakewood | 24. City of Sea Tac |
| 5. Clark County | 15. City of Maple Valley | 25. City of Shoreline |
| 6. City of Covington | 16. Mason County Public Works and Utilities and Waste Management | 26. Snohomish County |
| 7. City of Edgewood | | 27. City of Tacoma |
| 8. City of Everett | 17. City of Mill Creek | 28. Thurston County |
| 9. City of Kenmore | 18. City of Monroe | 29. City of University Place |
| 10. City of Kent | 19. City of Newcastle | 30. WSDOT |
| | 20. Pierce County | |

Regional Road Maintenance ESA Program Framework

Figure 1



The 10 Program Elements



Regional Forum



Adaptive Management



Program Review and Approval



Emergency Response



Training



Biological Data Collection



Compliance Monitoring



Biennial Reports



Scientific Research



BMPs and Conservation Outcomes



Program Element 1: Regional Forum

- ⇒ Share information
- ⇒ Troubleshoot BMPs
- ⇒ Notify agencies of:
 - Training programs
 - Meetings
 - Changes to program
 - Adaptive Management

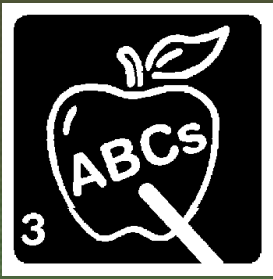


Program Element 2: Program Review and Approval

➔ Program Review:

- Review local agency written Part III application**
- Determine if Agency's Part 3 meets regional requirements**
- Provide written statement to NOAA Fisheries**

➔ NOAA Fisheries grant final approval according to each agency's process.



Program Element 3: Training

- ⇒ Provide training to all road maintenance personnel
- ⇒ Provide consistent, comprehensive training
- ⇒ “Classroom” Training
- ⇒ Field BMP Training
- ⇒ Improve Regional Training Program through input to Adaptive Management
 - ⇒ Improve current courses
 - ⇒ Add new courses



Program Element 4: Compliance Monitoring

- Review Implementation/Adaptive Management
 - Meet w/Environmental Personnel
 - Review Permits, BMPs
 - Any “In Water” Work
- Conduct Performance Assessments
 - Assess adequacy of BMPs
 - Checklist Development/Use
 - BMPs Implemented
 - BMP Effectiveness



Program Element 4: Compliance Monitoring

- **Outcome Assessments**
 - **Evaluate BMP Implementation**
 - **Review Adaptive Management (Local Agency ESA Team)**
- **Coordination/Communication w/Resource Agencies**
 - **Environmental Staff and Crews**
 - **Between Crews and Local Agency ESA Team**
 - **Permit Process**
 - **On Site Consultation (as required)**
 - **Between Agency and Regional Forum**

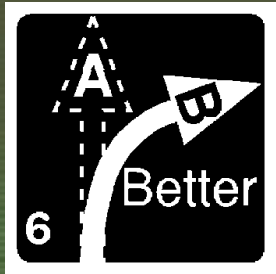


Program Element 5: Scientific Research

- ➔ **Evaluate BMP effectiveness**
- ➔ **Update the BMPs based on findings**

By Means Of:

- ➔ **Literature research**
- ➔ **Case studies**
- ➔ **Analysis of specific BMPs**
- ➔ **New Technology Research**



Program Element 6: Adaptive Management

- ⇒ Applies to All Program Elements
- ⇒ Incorporate New Information into BMP Decisions and Actions
 - Review Compliance Monitoring
 - Review Effectiveness Monitoring
 - Review Implementation of Regional Program
 - Review if BMPs are Accomplishing Prescribed Outcomes
- ⇒ Review Scientific Research
- ⇒ Sharing of Collected Data

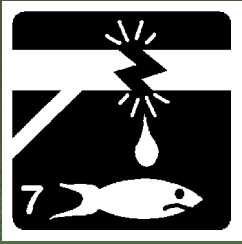


If it's not working... ADAPT



**ADAPTIVE
MANAGEMENT**

- ⇒ Findings from monitoring will be used to develop better BMPs.
- ⇒ BMPs in *Guidelines* will be updated using new findings
- ⇒ Adaptive Management allows new information to be included in decisions and actions affecting implementation of the program



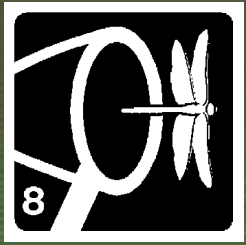
Program Element 7: Emergency Response

- ➔ **Respond immediately to natural or human caused emergencies**
- ➔ **Actions undertaken to avoid:**
 - **Imminent threat to public health or safety**
 - **Imminent danger to public or private property**
 - **Imminent threat of serious environmental degradation**



Program Element 7: Emergency Response

- ⇒ Notification of Appropriate Resource Agency**
- ⇒ Develop Resource Agency Phone Tree**
- ⇒ Incorporate BMPs Where Possible**
- ⇒ Where appropriate, Permit Process Begins After Stabilization**
- ⇒ Once emergency is stabilized, refer to “Maintenance Categories” to complete repair**

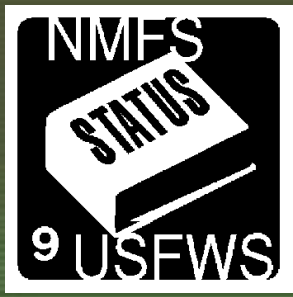


Program Element 8: Biological Data Collection

Provide maintenance staff with ROW habitat location information to make appropriate BMP decisions.



- Identification of aquatic habitat resources within ROW
- ROW aquatic habitat location to make BMP decisions
- Train and alert staff where to apply the guidelines
 - Accomplished by the use of maps, geographic information systems (GIS), site visits, or marking locations in the field.

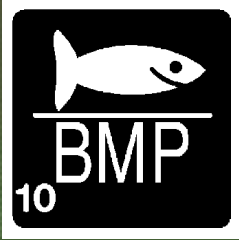


Program Element 9: Biennial Reports



Each Agency Reports on:

- ⇒ Status of each program element
- ⇒ Training program
- ⇒ Scientific research
- ⇒ Review of implementation
- ⇒ Adaptive management recommended changes



Program Element 10: BMPs and Conservation Outcomes



**MINIMIZE
EROSION/
SEDIMENTATION**



**MAXIMIZE
HABITAT**

**BMPs Focus on Conservation Outcomes for
Maintenance Activities:**

- ⇒ **MINIMIZE** erosion/sedimentation
- ⇒ **CONTAIN** pollutants
- ⇒ **MAXIMIZE** habitat improvements

BMPs are....

- ⇒ Schedules of activities**
- ⇒ Prohibitions of practices**
- ⇒ Physical structures**
- ⇒ Implementation of this program**
- ⇒ Other management practices**

To reduce pollution or to provide habitat protection/maintenance.

BMPs are Outcome Based

- ⇒ BMPs describe procedures to perform road maintenance activities that avoid and minimize impacts.
- ⇒ BMP use is not enough.
- ⇒ Compliance is:
 - Not judged on how many BMPs are used.
 - Compliance is judged on how well the final outcomes are met.




BMP Outcome Category Matrix


Choose one or more Outcome Categories























































Select one or more BMPs

page 2.19



BMP Outcome Category Matrix
Figure 13

 = Recommended BMP Application but not limited to

BMP	PAGE	BMP OUTCOME CATEGORY							
		Keep Water From Work Area	Reduce Potential for Soil Erosion	Filter / Perimeter Protection	Settling	Reduce Water Velocity / Erosive Forces	Containment	Habitat Protection / Maintenance	Reduce Potential for Contaminants Falling Into Water
AQUA BARRIER	2.20								
BACK OF SLOPE PLANTING	2.23								
COFFERDAM	2.25								
COIR FABRIC	2.28								
COIR LOG	2.30								
CONCRETE CONTAINMENT (1)	2.33								
CONCRETE CONTAINMENT (2)	2.36								
CONSTRUCTION ACCESS ROAD	2.38								
CONTINUOUS BERM	2.41								
CURB INLET SEDIMENT TRAP	2.44								
DEWATERING	2.49								
DIAPER NETTING	2.51								
DITCH LINING	2.53								
DIVERSION BERM	2.55								
DIVERSION CHANNEL	2.57								
DUST CONTROL	2.60								
EXCELSIOR FILLED LOG	2.62								
FILTER FABRIC	2.64								
GRASS LINED CHANNEL	2.66								
GRAVEL FILLED SUMP	2.70								
HALF ROUND FILTER	2.71								
HAND SEEDING	2.73								
HYDROSEEDING	2.75								
INLET PROTECTION	2.77								
KIMBLE FILTER PIPE	2.84								
LARGE WOODY MATERIAL	2.86								
LIVE STAKING	2.91								
MULCHING	2.95								
PLASTIC COVERING	2.97								
PLYWOOD WORK PLATFORM	2.99								

Maintenance Categories

- 1. Roadway Surface**
- 2. Enclosed Drainage Systems**
- 3. Cleaning Enclosed Drainage Systems**
- 4. Open Drainage Systems**
- 5. Watercourses and Streams**
- 6. Stream Crossings**
- 7. Gravel Shoulders**
- 8. Street Surface Cleaning**
- 9. Bridge Maintenance**
- 10. Snow and Ice Control**
- 11. Emergency Slide/Washout Repair**
- 12. Concrete**
- 13. Sewer Systems**
- 14. Water Systems**
- 15. Vegetation**

Part 1 (Routine) BMPs



**BMPS &
CONSERVATION
OUTCOMES**

**See BMP table on Maintenance
Category Sheet:**

- Disturbed Areas**
- Equipment and Tools**
- Material/Waste Disposal**
- Spill Prevention & Control**

Part 1: Example: Open Drainage Systems

- **Maintain and Restore Structure**
- **Maintain and Restore Water Quality by Cleaning**
- **Minimize Sediments and Debris from Leaving Work Site**
- **Maintain/Restore Storage and Drainage Capacity**
- **Reduce Flooding from Plugged System**
- **Keep Structure Clear of Debris**
- **Restore Surface Water Drainage**
- **Reduce Sediment/Debris Loading to Water Bodies**
- **Leave Vegetation in Ditch that does not Impede Flows**



Part 2: Best Management Practices



**MINIMIZE
EROSION/
SEDIMENTATION**



**MAXIMIZE
HABITAT**

BMP: Aqua Barrier

Description

Purpose

Applications

Limitations

Construction

Guidelines

page 2.21



BMP AQUA BARRIER

DESCRIPTION

An aqua barrier is a manufactured vinyl tube filled with water to provide a temporary/portable dam or barrier positioned to contain or divert the movement of water.

PURPOSE

The purpose of this BMP includes, but is not limited to:

- Providing a dry construction area in a stream or waterway.
- Providing a bypass for a stream or waterway.
- Temporary reservoirs for water storage.
- Excluding waters from work area under and around bridges or piers.

APPLICATIONS

This BMP may be used for stream diversion at a construction site. It may be used in fish habitat restoration, flood control, erosion control through diversion or containment of flowing water, silt containment, sedimentation collection or settling ponds, and/or as a portable dam.

LIMITATIONS

This BMP should not be used:

- To cross more than 2/3 of the main flow of any salmonid bearing water at the time of the year when any life history stage of salmonids are expected to be present. (unless required by permit)
- Other than specified by the manufacturer's guidelines.

CONSTRUCTION GUIDELINES

- When used in watercourses or streams, aqua barriers must be used in accordance with permit requirements.
- Refer to Appendix B for Fish Exclusion Protocols.
- Follow manufacturer recommendations and guidelines for installation and safety measures.
- Knives shall be worn by workers for emergency deflation.
- Keep a repair kit on site in case of small punctures.

BMP: Aqua Barrier (continued)

BMP Maintenance and Monitoring


BMPs may need to be removed

Part 2 of the Guidelines lists 53 BMPs

There are many more that will achieve conservation outcomes

page 2.22

BMP: AQUA BARRIER (continued)



Aqua barrier used as coffer dam

- Remove any visible rocks or sharp objects prior to installing barrier.
- The aqua barrier can be deployed on dry ground, in standing and/or flowing water.
- Multiple aqua barriers can be joined with connections.

BMP MAINTENANCE

- Inspect BMPs several times daily during the workweek. Schedule additional inspections during storm events. Any required repairs shall be made.
- Repair punctures with repair kit immediately.
- Allow to dry before rolling up for storage.
- Store away from chemicals, and above 10° F.

BMP REMOVAL

- Follow manufacturer recommendations for removal.
- Remove BMP (recycle and/or reuse if applicable).
- Water discharged from water barrier shall meet water quality temperature standards at the point of discharge.

2.21

Session Summary:

- ➔ The Regional Program is road maintenance's response to the ESA
- ➔ The Regional Program is Outcome Based
- ➔ The Guidelines help you select BMPs to meet Conservation Outcomes

Implementation of the program maintains your agency's ESA coverage